



MAYUMI2A (SUMA).ST25.txt  
SEQUENCE LISTING

<110> KABUSHIKI KAISHA HAYASHIBARA SEIBUTSU KAGAKU KENKYUJO  
MAYUMI, Tadanori  
TSUTSUMI, Yasuo  
NAKAGAWA, Shinsaku  
IKEGAMI, Hakuo

<120> Biologically-active conjugate

<130> MAYUMI2A

<140> 10/668,178

<141> 2003-09-24

<150> JP 83509/2002

<151> 2002-03-25

<150> JP 185387/2002

<151> 2002-06-26

<160> 16

<170> PatentIn version 3.3

<210> 1

<211> 157

<212> PRT

<213> Homo sapiens

<400> 1

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val  
1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60

Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala  
85 90 95

Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys  
100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys  
115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

MAYUMI2A (SUMA).ST25.txt  
Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 2  
<211> 157  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic (variant protein of human tumor necrosis factor)

<220>  
<221> misc\_feature  
<222> (11)..(11)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (65)..(65)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (90)..(90)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (98)..(98)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (112)..(112)  
<223> Xaa can be any naturally occurring amino acid

<220>  
<221> misc\_feature  
<222> (128)..(128)  
<223> Xaa can be any naturally occurring amino acid

<400> 2

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Xaa Pro Val Ala His Val  
1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60

Xaa Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Xaa Val Asn Leu Leu Ser Ala  
85 90 95

MAYUMI2A (SUMA).ST25.txt

Ile xaa Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Xaa  
100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Xaa  
115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 3

<211> 157

<212> PRT

<213> Artificial

<220>

<223> synthetic (Variant protein of human tumor necrosis factor)

<400> 3

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Met Pro Val Ala His Val  
1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60

Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Pro Val Asn Leu Leu Ser Ala  
85 90 95

Ile Arg Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Asn  
100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Pro  
115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 4

## MAYUMI2A (SUMA).ST25.txt

```

<211> 92
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<220>
<221> misc_feature
<222> (21)..(22)
<223> n is a, c, g, or t

<400> 4
tctactccca ggtcctcttc nnsggccaag gctgcccctc cacccatgtg ctcctcacc 60
acaccatcag ccgcacgcgc gtctcctacc ag 92

<210> 5
<211> 90
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<220>
<221> misc_feature
<222> (41)..(42)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (65)..(66)
<223> n is a, c, g, or t

<400> 5
ggcctcagcc ccctctgggg tctccctctg gcaggggcts nngatggcag agaggagggt 60
gacsnnngtc tggtaggaga cggcgatgcg 90

<210> 6
<211> 110
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<220>
<221> misc_feature
<222> (40)..(41)
<223> n is a, c, g, or t

<220>
<221> misc_feature
<222> (88)..(89)
<223> n is a, c, g, or t

<400> 6
tagtcgggcc gattgatctc agcgtgagt cggtcacsn nctccagctg gaagaccct 60
cccagataga tgggctcata ccaggsnng gcctcagccc cctctgggggt 110

```

MAYUMI2A (SUMA).ST25.txt

```

<210> 7
<211> 95
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<220>
<221> misc_feature
<222> (72)..(73)
<223> n is a, c, g, or t

<400> 7
tagttgttcc tttctatgcg gccagccgg ccatggccat ggtcagatca tcttctcgaa      60
ccccgagtga cnsccctgta gcccatgttg tagca                                  95

<210> 8
<211> 49
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<400> 8
gccagactc ggcaaagtcg agatagtcgg gccgattgat ctcagcgct                    49

<210> 9
<211> 36
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as primer with NNS sequence)

<400> 9
gttggttcctt tctatgcggc ccagccggcc atggcc                                36

<210> 10
<211> 58
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as linker to insert into an
expression vector a cDNA coding a variant protein of human tumor
necrosis factor)

<400> 10
gtttaacttt aagaaggaga tatacatatg gtcagatcat cttctcgaac cccgagtg      58

<210> 11
<211> 59
<212> DNA
<213> Artificial

<220>
<223> synthetic (Oligonucleotide used as linker to insert into an
expression vector a cDNA coding a variant protein of human tumor
necrosis factor)

```

MAYUMI2A (SUMA).ST25.txt

<400> 11  
cttccttttcg ggcttttgta gcagccgaat tccagggcaa tgatcccaaa gtagacctg 59

<210> 12  
<211> 471  
<212> DNA  
<213> Artificial

<220>  
<223> synthetic (DNA coding a variant protein of human tumor necrosis factor)

<220>  
<221> CDS  
<222> (1)..(471)

<400> 12  
gtc aga tca tct tct cga acc ccg agt gac atg cct gta gcc cat gtt 48  
Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Met Pro Val Ala His Val  
1 5 10 15

gta gca aac cct caa gct gag ggg cag ctc cag tgg ctg aac cgc cgg 96  
Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30

gcc aat gcc ctc ctg gcc aat ggc gtg gag ctg aga gat aac cag ctg 144  
Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45

gtg gtg cca tca gag ggc ctg tac ctc atc tac tcc cag gtc ctc ttc 192  
Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60

tcg ggc caa ggc tgc ccc tcc acc cat gtg ctc ctc acc cac acc atc 240  
Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80

agc cgc atc gcc gtc tcc tac cag acc ccc gtc aac ctc ctc tct gcc 288  
Ser Arg Ile Ala Val Ser Tyr Gln Thr Pro Val Asn Leu Leu Ser Ala  
85 90 95

atc cgc agc ccc tgc cag agg gag acc cca gag ggc gct gag gcc aac 336  
Ile Arg Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Asn  
100 105 110

ccc tgg tat gag ccc atc tat ctg gga ggg gtc ttc cag ctg gag ccg 384  
Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Pro  
115 120 125

ggt gac cga ctc agc gct gag atc aat cgg ccc gac tat ctc gac ttt 432  
Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

gcc gag tct ggg cag gtc tac ttt ggg atc att gcc ctg 471  
Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 13  
<211> 157  
<212> PRT  
<213> Artificial

<220>  
<223> Synthetic Construct

## MAYUMI2A (SUMA).ST25.txt

&lt;400&gt; 13

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Met Pro Val Ala His Val  
 1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
 20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
 35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
 50 55 60

Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
 65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Pro Val Asn Leu Leu Ser Ala  
 85 90 95

Ile Arg Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Asn  
 100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Pro  
 115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
 130 135 140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
 145 150 155

&lt;210&gt; 14

&lt;211&gt; 471

&lt;212&gt; DNA

&lt;213&gt; Artificial

&lt;220&gt;

&lt;223&gt; synthetic (DNA coding a variant protein of human tumor necrosis factor)

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(471)

&lt;400&gt; 14

gtc aga tca tct tct cga acc ccg agt gac gcg cct gta gcc cat gtt 48  
 Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Ala Pro Val Ala His Val  
 1 5 10 15

gta gca aac cct caa gct gag ggg cag ctc cag tgg ctg aac cgc cgg 96  
 Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
 20 25 30

gcc aat gcc ctc ctg gcc aat ggc gtg gag ctg aga gat aac cag ctg 144  
 Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu

MAYUMI2A (SUMA).ST25.txt  
40 45

35  
gtg gtg cca tca gag ggc ctg tac ctc atc tac tcc cag gtc ctc ttc 192  
Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60  
tcg ggc caa ggc tgc ccc tcc acc cat gtg ctc ctc acc cac acc atc 240  
Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80  
agc cgc atc gcc gtc tcc tac cag acc cgc gtc aac ctc ctc tct gcc 288  
Ser Arg Ile Ala Val Ser Tyr Gln Thr Arg Val Asn Leu Leu Ser Ala  
85 90 95  
atc gcc agc ccc tgc cag agg gag acc cca gag ggg gct gag gcc ctc 336  
Ile Ala Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Leu  
100 105 110  
ccc tgg tat gag ccc atc tat ctg gga ggg gtc ttc cag ctg gag acc 384  
Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Thr  
115 120 125  
ggt gac cga ctc agc gct gag atc aat cgg ccc gac tat ctc gac ttt 432  
Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140  
gcc gag tct ggg cag gtc tac ttt ggg atc att gcc ctg 471  
Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 15  
<211> 157  
<212> PRT  
<213> Artificial

<220>  
<223> Synthetic Construct

<400> 15

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Ala Pro Val Ala His Val  
1 5 10 15  
Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30  
Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45  
Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60  
Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80  
Ser Arg Ile Ala Val Ser Tyr Gln Thr Arg Val Asn Leu Leu Ser Ala  
85 90 95  
Ile Ala Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Leu  
100 105 110



MAYUMI2A (SUMA).ST25.txt

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Thr  
115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155

<210> 16  
<211> 157  
<212> PRT  
<213> Artificial

<220>  
<223> synthetic (variant protein of human tumor necrosis factor)

<400> 16

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Ala Pro Val Ala His Val  
1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg  
20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu  
35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe  
50 55 60

Ser Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile  
65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Arg Val Asn Leu Leu Ser Ala  
85 90 95

Ile Ala Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Leu  
100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Thr  
115 120 125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe  
130 135 140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu  
145 150 155